Groundwater & Recharge

This image shows both the areas that recharge the Aquifer and the depth to groundwater from the land surface. The Aquifer receives a large percentage of its water from surface and subsurface flow from the higher regions immediately adjacent to it. These regions, known as "aquifer recharge areas," are shown outlined in green on this page. Land uses and human activities on the aquifer recharge areas have a significant and measurable affect on the quantity and quality of water in the Aquifer.

The depth to groundwater in the Aquifer is both dependent upon the elevation of the land surface (described on the Geography Map on page 7) and the elevation of the top of groundwater (described on page 18, Aquifer Modeling). The groundwater table surface in the Aquifer is almost flat - much like the land surface over the Aquifer - but it does dip at a gentle slope towards the west. In the northern Rathdrum Prairie the groundwater table is about 2,150 feet above mean sea level, while along the Little Spokane River it is about 1,600 feet above mean sea level.

The greatest depths to groundwater in the Aquifer are found in the northern part of the Rathdrum Prairie, and the depths become progressively shallower as one moves into the Spokane Valley and further west. This difference is due primarily to higher land elevation in Idaho compared to the Spokane Valley, relative to the gently dipping groundwater table surface below the ground.

Washington Recharge

In Washington, the aquifer recharge areas (outlined in green) are called "watersheds", and these watersheds contribute significantly to the Aquifer. Many of the streams shown on the map originate in the surrounding hillsides but seem to stop before they reach the Spokane River. The water in the streams does not just disappear but seeps into the ground and then flows underground to the Aquifer. Even the small watersheds with no surface streams contribute water to the Aquifer. The total contribution of water to the Aquifer from the watersheds around the Spokane Valley is about 300 cubic feet per second, equivalent to over 70 billion gallons of water each year.

Idaho Recharge

In Idaho, the aquifer recharge areas (outlined in green) are called Critical Aquifer Recharge Areas or "CARAs". CARAs were officially recognized by the State of Idaho in 1990 to provide an increased level of protection for the Aquifer. Many CARAs include a lake that acts to moderate the water flow between the CARA and the Aquifer. Note the CARA that includes Hayden Lake on the map. Hayden Lake collects water from its CARA, and this water continually seeps to the Aquifer through the lake bed. Hayden Lake also discharges lake water each spring to a large stream on the ground surface above the Aquifer. This stream completely soaks into porous soils above the Aquifer within one mile of the lake.

Aquifer and Recharge Areas

in Square Miles

	Aquifer	Recharge	Total
Idaho	202.87	381.67	584.54
Washington	124.95	296.14	421.09
Totals	327.82	677.81	1,005.63

Legend

Depth in feet from ground surface to top of groundwater.

- 0 - 5 feet
- 5 - 50 feet
- 50 - 100 feet
- 100 - 300 feet
- 300 - 500 feet
- > 500 feet